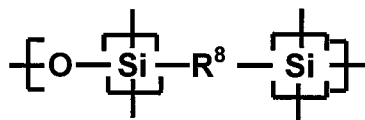


AMENDMENTS TO THE SPECIFICATION

Please amend the specification as indicated hereafter. It is believed that the following amendments and additions add no new matter to the present application.

The following is a marked-up version of the submitted amended paragraph beginning on page 15, line 12 and ending at page 16, line 3 of the specification as filed with the language that is underlined ("____") being added and the language that contains strikethrough ("—") being deleted:

Another embodiment of the flexible proton electrolyte membrane has a chemical structure including a hybrid inorganic-organic copolymer network having at least one backbone unit having a formula $[-O-Si(WX)-O-Si(YQ)-R^1-Si(YQ)-]$. Groups W, X, and Y can include, but are not limited to, $-OPO_3H_2$, $-R^2A$, $-R^3$. Group Q includes $[-O-Si-R^8-Si-]$.



Groups R^2 and R^3 are hydrocarbons similar to those described above. However, in this instance groups R^1 as well as group R^8 are either a short chain hydrocarbon or a long chain hydrocarbon. Groups R^1 and R^8 are different (e.g., both R^1 and R^8 are not short chain hydrocarbons). The short chain hydrocarbon includes hydrocarbons such as, but not limited to, a linear C_2 to C_{20} hydrocarbon, a branched C_2 to C_{20} hydrocarbon, a halogen-substituted linear C_2 to C_{20} hydrocarbon, a halogen-substituted branched C_2 to C_{20} hydrocarbon, as well as hydrocarbon chains including aromatic rings. The long chain hydrocarbon includes hydrocarbons such as, but not limited to, a hydrocarbon having a molecular weight from about 500 to 100,000 and a halogen-substituted hydrocarbon having a molecular weight from about 500 to 100,000. An exemplary structure is shown in Structures I through L.

Please add the following text at page 4, line 11.

A fuel cell, comprising:

a flexible proton electrolyte membrane having the characteristic of a proton conductivity of about 1×10^{-6} to 1×10^{-1} S/cm at a temperature range of about 30°C to about 180°C and a relative humidity of about 0% to 100%; with the proviso that the fuel cell does not include a humidifier, and a thermal management system for controlling the temperature in the fuel cell.